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NPIC/R-1002/61

September 1961

PHOTOGRAPHIC INTERPRETATION REPORT

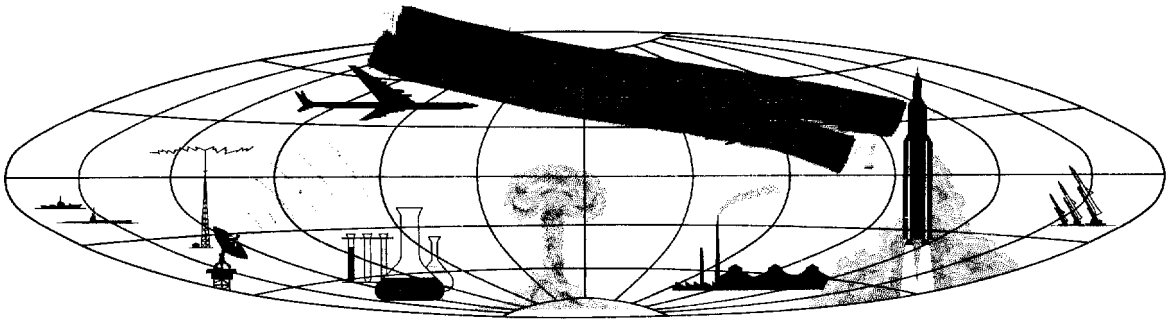
HEAVY PRESS BUILDI[redacted]

KUYBYSHEV METALLURGICAL PLANT

KUYBYSHEV OBLAST, USSR

ARMY NAVY AIR FORCE CIA

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER



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PHOTOGRAPHIC INTERPRETATION REPORT

HEAVY PRESS BUILDING
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PREFACE

This photographic interpretation report has been prepared by the Air Force, Army, Navy, and Central Intelligence Agency in response to requirements requesting identification of a heavy press building under construction in Kuybyshev Oblast, USSR, appearing in two photographs in the April 1959 issue of the Soviet magazine Novaya Tekhnika Montazhnykh i Spetsialknykh Rabot v Stroitel'sdve, and an analysis of the structural framing of this building and similar buildings at the Verkhnyaya Salda and Kuybyshev Metallurgical plants.

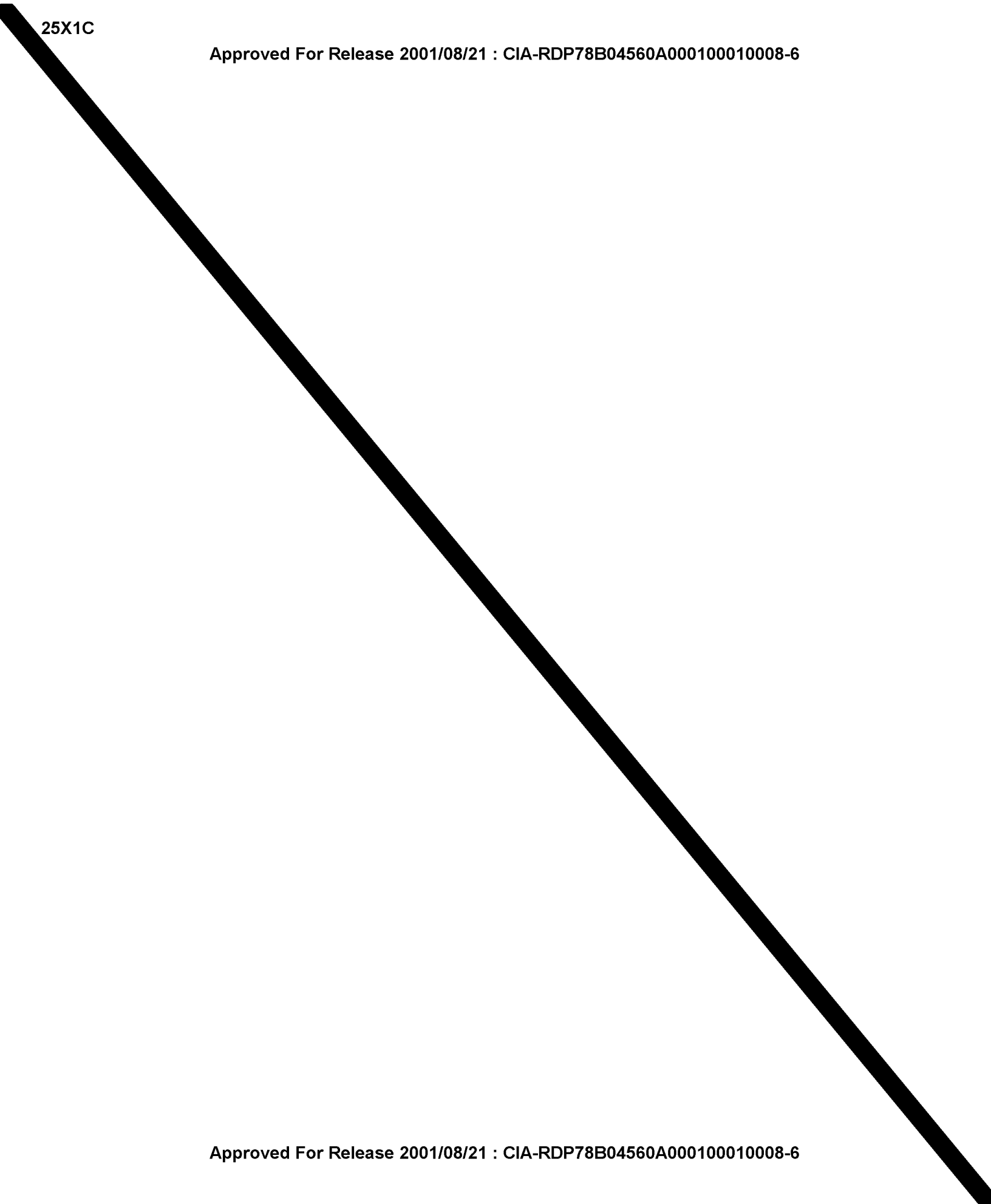
SUMMARY

A study of available photography of Kuybyshev Oblast indicates that a building similar to the unidentified building in the photograph in the Soviet magazine is located at the Kuybyshev Metallurgical Plant. An analysis of aerial photographs of the Kuybyshev plant, a similar plant at Verkhnyaya Salda, and the ground photograph in the Soviet magazine proves that the unidentified building is definitely at the Kuybyshev Metallurgical Plant and is identical to the building at Verkhnyaya Salda. Therefore, analysis of the structural framing of one plant applies to both.

DISCUSSION

In an attempt to identify the construction shown in the magazine photographs (Figures 1 and 2), available photography of Kuybyshev Oblast was studied, and the only similar structure found was at the Kuybyshev Metallurgical Plant. On the assumption that the plant at Kuybyshev could be the one shown in the magazine photos, an aerial photograph of the completed heavy press building at Kuybyshev (taken in [redacted] 25X1D was compared with a photograph of a similar building under construction at Verkhnyaya Salda.

Detailed measurements and structural analysis of the high-bay building at the Kuybyshev Metallurgical Plant (Figure 3) and the building at the Verkhnyaya Salda Metallurgical Plant (Figure 4) indicate no significant differences in the two buildings. Therefore, it is assumed that all structural details observable in one building are duplicated at the other. On this premise, most of the steel framework in the Kuybyshev building can be extrapolated from a study of the similar building at Verkhnyaya Salda. A plan view derived in this manner and presented in Figure 5 shows supporting columns at Kuybyshev.



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According to accepted principles of geometry, if the same sides of two similar polygons are found to be equal, then all comparable dimensions of these polygons are also equal and the polygons are identical. The steel framing of the high-bay building at Verkhnyaya Salda was

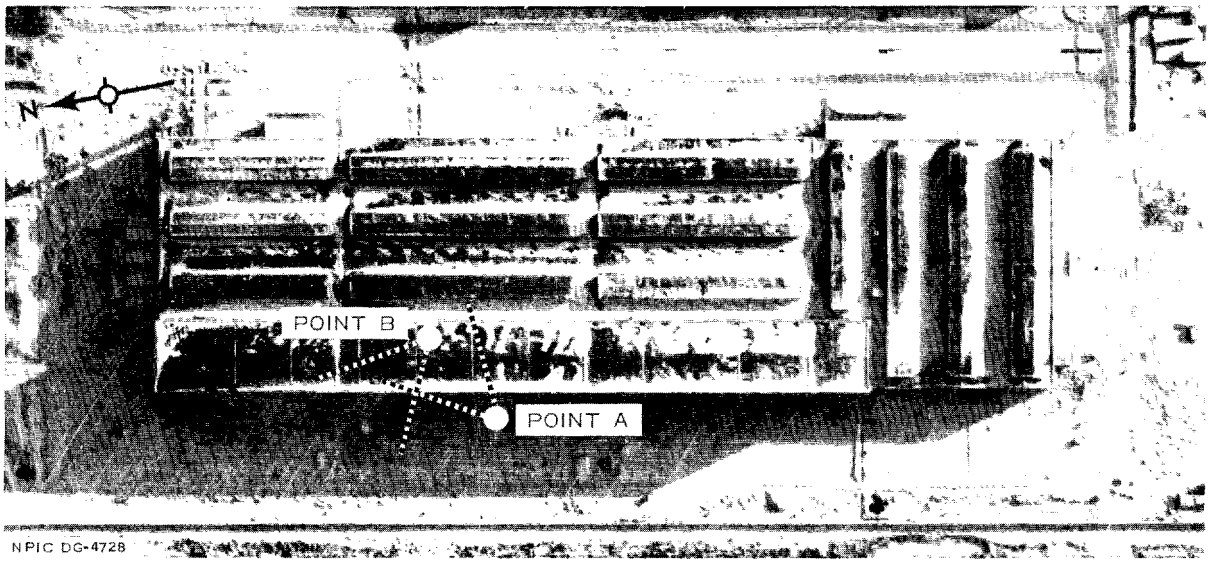

FIGURE 3. VERTICAL OF KUYBYSHEV METALLURGICAL PLANT HIGH-BAY BUILDING SHOWING CAMERA STATIONS A AND B.

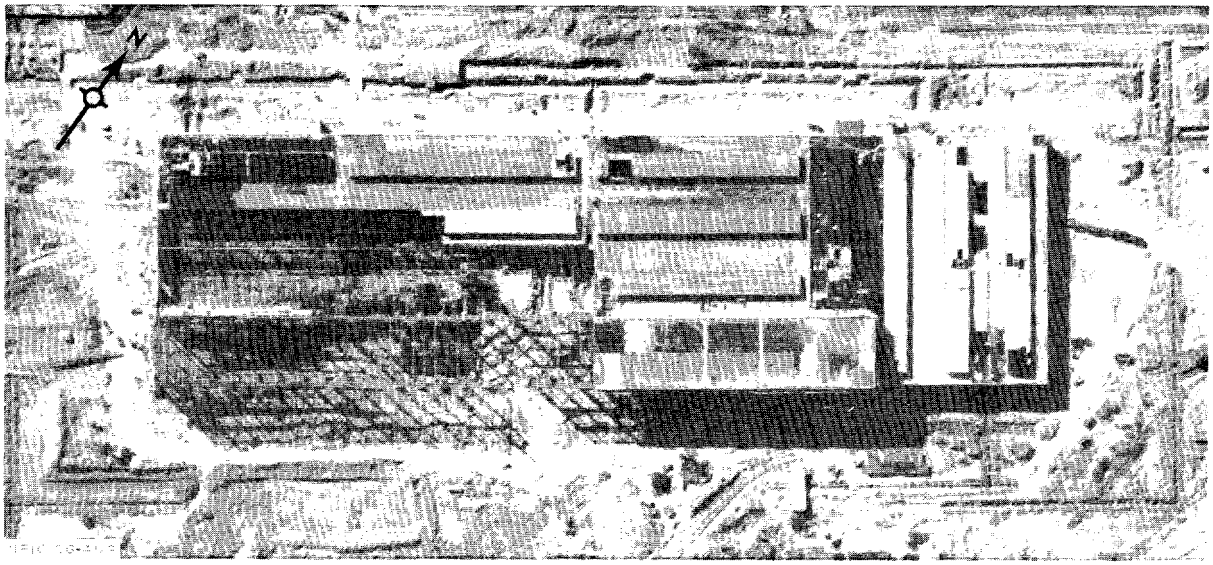

FIGURE 4. VERTICAL OF VERKHNYAYA SALDA METALLURGICAL PLANT HIGH-BAY BUILDING.

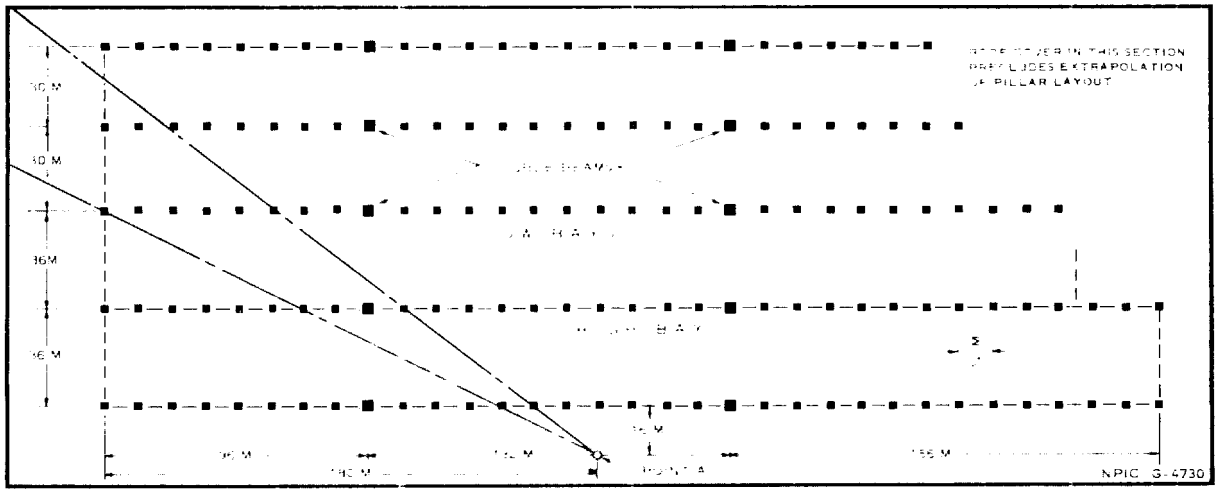

FIGURE 5. PLAN VIEW SHOWING LOCATIONS OF MAIN SUPPORTING COLUMNS, KUYBYSHEV METALLURGICAL PLANT.

compared proportionally to the building framework shown in Figure 1 and was found geometrically similar. Main column spacing was found to be 12 meters between centers on the aerial photo of Verkhnyaya Salda. The article accompanying Figure 1 indicates a 12-meter spacing in the heavy press building. This provides the necessary common dimension proving the steel framing at Kuybyshev and Verkhnyaya Salda is identical to that visible in Figure 1.

Having determined that the steel framing in Figure 1 is identical to that at Verkhnyaya Salda and Kuybyshev, the point from which the photography in Figure 1 was taken (Point A) could be established. Point A (Figure 5) was located by the intersection of straight lines drawn on the plan view through coincident and identifiable points appearing in Figure 1. Once Point A was located, the accuracy of its location was checked by comparing the position of silhouettes of objects appearing in the background of Figure 1 with the position of similarly-shaped objects appearing in the aerial view of the Kuybyshev Metallurgical Plant (Figure 3).

Figure 6A, a vertical view of the Kuybyshev Metallurgical Plant
25X1D taken [redacted] contains a reference scale which allows the reader to compare the location of objects on the vertical view with similar ob-

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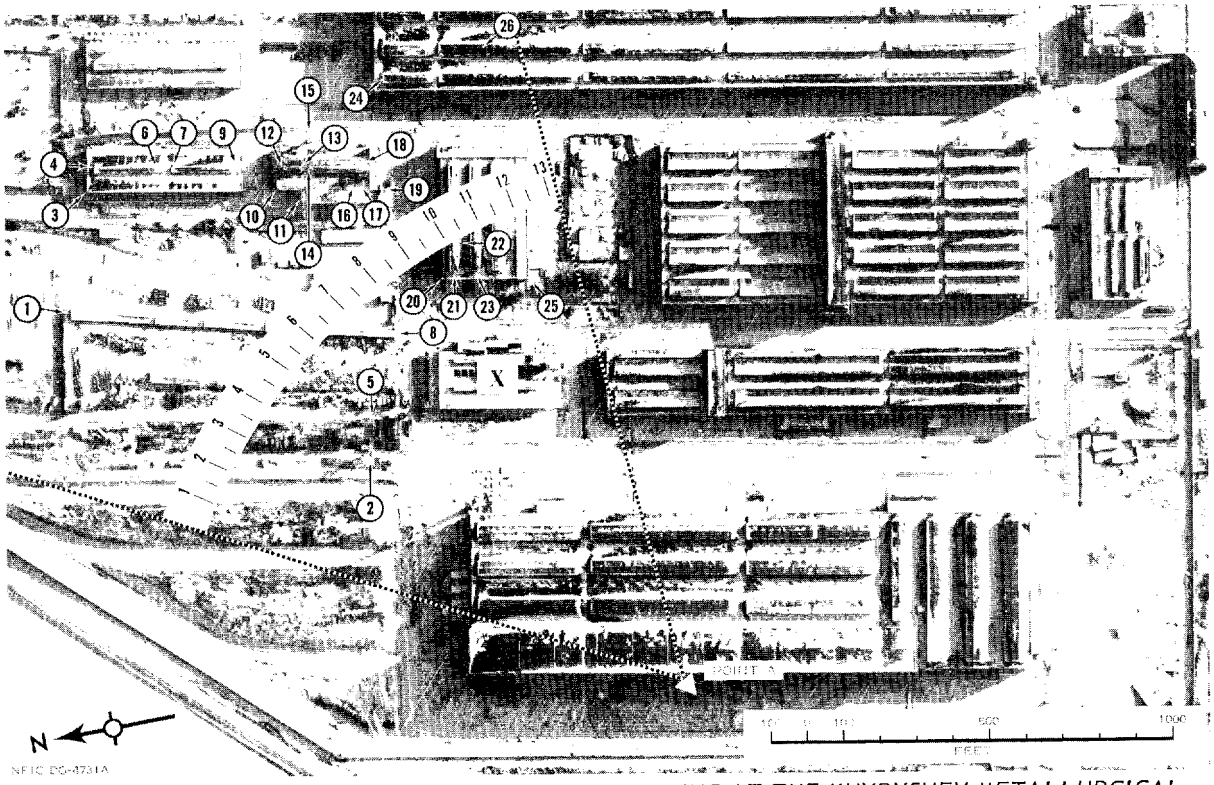


FIGURE 6(A). VERTICAL VIEW OF HEAVY PRESS BUILDING AT THE KUYBYSHEV METALLURGICAL PLANT TAKEN [redacted] 25X1D

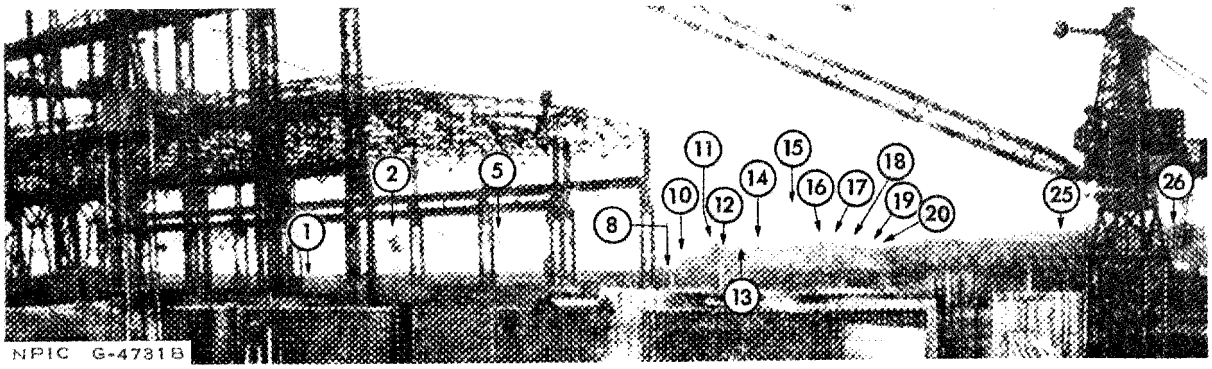


FIGURE 6(B). PERSPECTIVE VIEW OF HEAVY PRESS BUILDING AT THE KUYBYSHEV METALLURGICAL PLANT TAKEN IN 1957.

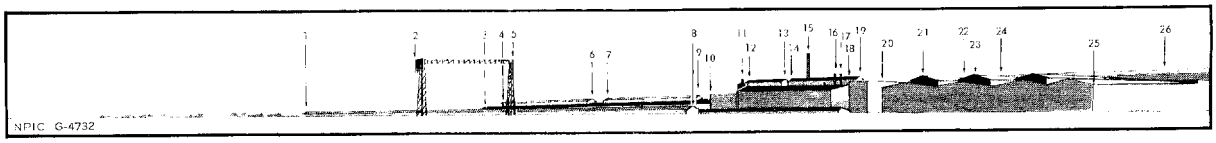


FIGURE 7. SILHOUETTE OF KUYBYSHEV METALLURGICAL PLANT DRAWN FROM AERIAL PHOTOGRAPHS.

jects on the perspective view (Figure 6B) of the same area. Those objects which have been checked and found proportional in size are given the same number in each view. A straight line should be drawn from Point A through an object and the curved reference scale on the vertical view. The number on the curved reference scale through which the line passes is then located on the reference scale along the base of Figure 6B. A vertical drawn through this point should intersect the object chosen in Figure 6A.

Figure 7 is a silhouette of the Kuybyshev Plant skyline, as it would 25X1D have existed in [redacted] constructed graphically from Figure 6A (taken in 25X1D [redacted]. The photogrammetric exercise required to prepare the perspective shown in Figure 7 revealed that the building just east of the north end of the high-bay building (Item X, Figure 6A) did not exist in [redacted] when, 25X1D according to the article, the heavy press building was constructed. This building, therefore, was not shown in Figure 7. The similarity between Figures 1 and 7 is readily visible.

A second ground photograph (Figure 2), accompanying the Soviet magazine article mentioned above, probably was taken from Point B in Figure 3 and is the same press foundation shown in Figure 1. However, there is insufficient detail common to both the second ground photograph (Figure 2) and the aerial photographs to relate them photogrammetrically as positively as is the case with Figure 1.

Since the steel framing shown in Figure 1 is part of the heavy press building at the Kuybyshev Metallurgical Plant which is identical to the heavy press building at Verkhnyaya Salda, the specific questions contained in the request for a structural analysis of the high-bay and low-bay sections of the "three" buildings can be answered by an examination of Figures 5 and 8.

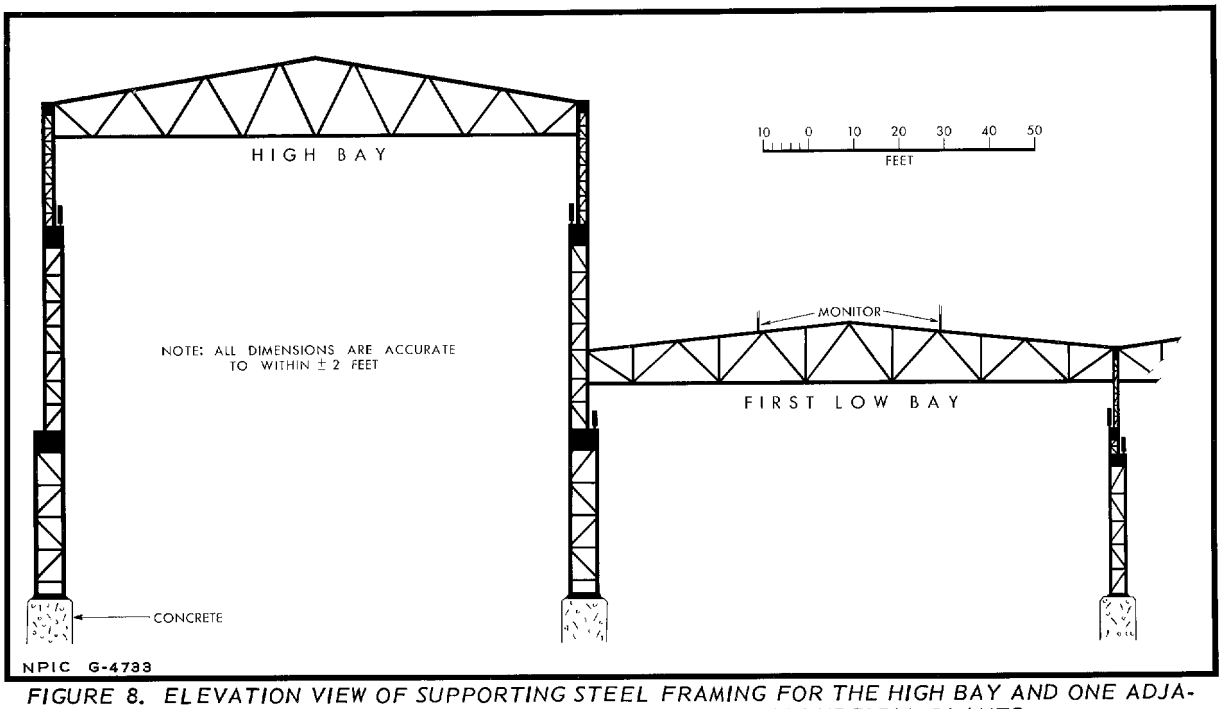


FIGURE 8. ELEVATION VIEW OF SUPPORTING STEEL FRAMING FOR THE HIGH BAY AND ONE ADJACENT LOW BAY AT VERKHNYAYA SALDA AND KUYBYSHEV METALLURGICAL PLANTS.

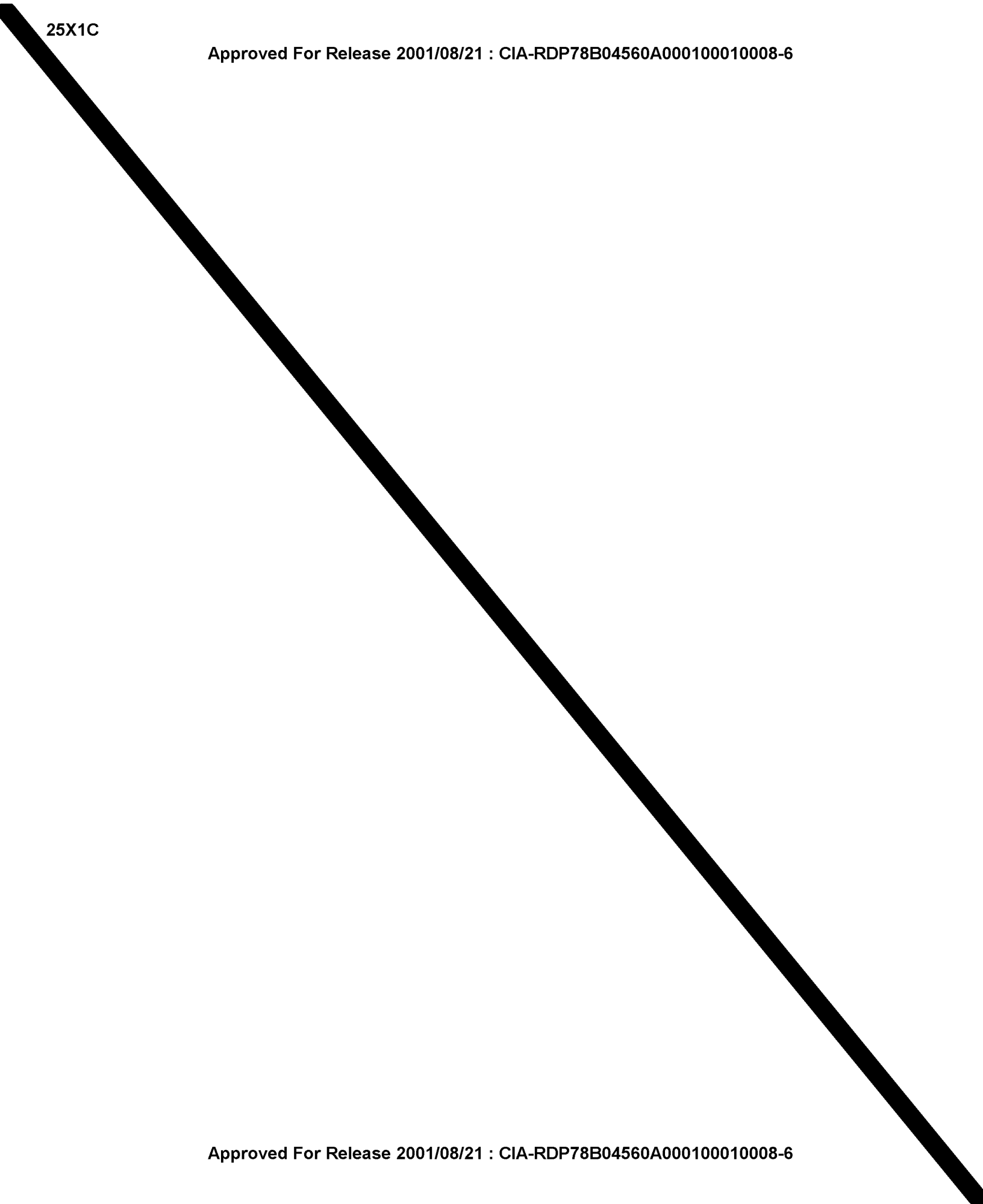
REFERENCES

PHOTOGRAPHY

Acquisition No	Date	Class
25X1D [redacted]		

DOCUMENTS

Milideev, L.V. "Vozvedeniye Slozhnovo Fundamenta Pod Tyazhely Press," Novaya Tekhnika Montazhnykh i Spetsialnykh Rabot v Stroitel'stve, No 4, Apr 59, pp 19-21. (U)



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